

Message

From: Groff, Kimberly (DEP) [Kimberly.Groff@MassMail.State.MA.US]
Sent: 3/10/2017 9:44:35 PM
To: Peter Tango [ptango@chesapeakebay.net]
CC: Carey, Richard (DEP) [richard.carey@state.ma.us]; Bienkowski, Dana [DBienkowski@donahue.umassp.edu]; Harry Stewart [hstewart@normandeau.com]; Colarusso, Phil [colarusso.phil@epa.gov]; Debbie Rutecki [drutecki@normandeau.com]; Ford, Kathryn (FWE) [kathryn.ford@state.ma.us]; coviatt@uri.edu; Thursby, Glen [Thursby.Glen@epa.gov]; Benjamin Jessup [benjamin.jessup@tetrattech.com]; Rebecca.Weidman@state.ma.us; Sue Kiernan [Sue.Kiernan@dem.ri.gov]; Voorhees, Jeanne [voorhees.jeanne@epa.gov]; Murphy, Bob [Bob.Murphy@tetrattech.com]; Paul.Stacey@wildlife.nh.gov; Henry, Dana [DHenry@donahue.umassp.edu]; Flippin, Jennifer [Jennifer.Flippin@tetrattech.com]; todd.callaghan@state.ma.us; Stover, Toby [Stover.Toby@epa.gov]
Subject: RE: MDEP DO TAC meetings

Hi Peter- thank you for the follow-up. I am glad that you made it back home. Kim

From: Peter Tango [mailto:ptango@chesapeakebay.net]
Sent: Friday, March 10, 2017 12:20 PM
To: Jessup, Benjamin; Callaghan, Todd (EEA); Thursby.glen@Epa.gov; coviatt@uri.edu; Colarusso.phil@Epa.gov; Ford, Kathryn (FWE); Sue.Kiernan@DEM.RI.GOV; Paul.Stacey@wildlife.nh.gov; voorhees.jeanne@epa.gov; Stover.Toby@epa.gov
Cc: Groff, Kimberly (DEP); Carey, Richard (DEP); Bienkowski, Dana; Harry Stewart; Debbie Rutecki; Weidman, Rebecca (DEP); Murphy, Bob; Henry, Dana; Flippin, Jennifer
Subject: RE: MDEP DO TAC meetings

Hi Folks,

Back in MD today, a good meeting yesterday, nice driving too – thankfully not in the snow and yuck along the coast today. OH, and yes, I tried to find lobster for lunch but only came up with an excellent New England Clam chowder and cod tacos, a fair trade when there was no lobster available ☺. Here is a bit of follow up from yesterday.

- 1) Good meeting yesterday. In benefitting from the collective wisdom of the monitoring and management community in the world, the following document may spawn further thoughts/provide other insights for this process of setting criteria and also considering the methods of standards assessment. I had mentioned work in Delaware that came full circle relatively recently. Please see the Murderkill River site specific DO criteria work here (weblink below). The first three sections is a lot of the background work on how they used data available to direct their decisions. Section 4 highlights the criteria, Section 6 highlights the assessment approach and decision-rules for meeting/exceeding standards. I'm sure each state has similar documentation, but I liked this document because it takes the reader through the process and decisions. For me it's a very nice progression in the presentation in a relatively short single document. I would be asking DE for additional details on how many sites need to be monitored/what is their sample site design – how do you select your site or sites/what are their assumptions about how representative a site is for how much of the river, if it is based on a season and one site what is the minimum amount of data you need to support your decision (i.e., we all know sensors can break, go out of calibration, hurricanes/nor'easters happen and removing gear to protect the investment may occur, etc.). That information would put a nice bow on this for me, I didn't see those details when I skimmed it before sending it to you here. The information may be in there, or it maybe it begs to have their folks invited into a discussion/set up a panel of other states that have to similarly have a sampling plan and decision-rules supporting the measure of attainment for a region.

<http://www.dnrec.delaware.gov/swc/wa/Documents/WAS/Murderkill%20River%20Reports/Updated%20Drafts/Proposed%20Site-specific%20Dissolved%20Oxygen%20Criteria%20for%20Tidal%20Murderkill%20River.pdf>

- 2) Regarding the discussion about bioreference curves using benthic macroinvertebrate community data and coincident dissolved oxygen measurements to discriminate habitat health. It is more an application of the

dissolved oxygen criteria than setting of criteria, but it shows the value of the data in the standards work in Chesapeake Bay. I had mentioned a May 2010 Chesapeake Bay document as a reference – see chapter 3, here is the link:

http://www.chesapeakebay.net/content/publications/cbp_51366.pdf

- 3) I thought you all might appreciate the following publication and find it at least of general interest while thinking about fish and dissolved oxygen relationships:

Impervious Surface, Summer Dissolved Oxygen, and Fish Distribution in Chesapeake Bay Subestuaries: Linking Watershed Development, Habitat Conditions, and Fisheries Management

http://dnr2.maryland.gov/fisheries/Documents/2011_Impervious_Surface.pdf

Abstract: We estimated target and limit impervious surface reference points (ISRPs) based on Chesapeake Bay dissolved oxygen (DO) criteria, and we examined associations and relationships among the percentage of watershed in impervious surface (IS), summer DO, and the presence of indicator species (blue crab *Callinectes sapidus*, white perch *Morone americana*, striped bass *M. saxatilis*, and spot *Leiostomus xanthurus*) in bottom waters of nine brackish subestuaries of Chesapeake Bay. Ideally, a target ISRP represented a level of development that maintained mean bottom DO at 5 mg/L or greater, while an ISRP threshold represented development that degraded mean bottom DO to less than 3 mg/L. The proportion of bottom trawls containing each indicator species rapidly declined from about 0.40 to 0.10 when DO fell below 3 mg/L, whereas the proportion remained at about 0.50 when DO was above 5 mg/L. The IS percentage had a significant negative influence on mean bottom DO and the odds that indicator species were present in midchannel bottom waters (0.8–7.0 m deep). Watersheds at or below a target IS of 5.5% (rural watershed) maintained mean bottom DO above 3 mg/L, but mean DO was only occasionally at or above 5 mg/L. Mean DO seldom exceeded 3 mg/L in watersheds with an IS value above 10% (suburban threshold). Comprehensive watershed management will be needed to offset significant degradation of bottom-water fish habitat in brackish subestuaries if rural lands are converted to suburban areas.

I'll send at least one more reference document next week.

Thanks again everyone. Good work. Be safe and take good care,

Cheers,

Peter Tango

USGS@CBPO

Chesapeake Bay Monitoring Coordinator

From: Jessup, Benjamin [mailto:benjamin.jessup@tetrattech.com]

Sent: Friday, February 24, 2017 11:09 AM

To: todd.callaghan@state.ma.us; Thursby.glen@Epa.gov; coviatt@uri.edu; Colarusso.phil@Epa.gov;

Kathryn.Ford@state.ma.us; Sue.Kiernan@DEM.RI.GOV; Peter Tango <ptango@chesapeakebay.net>;

Paul.Stacey@wildlife.nh.gov; voorhees.jeanne@epa.gov; Stover.Toby@epa.gov

Cc: Kimberly Groff (kimberly.groff@state.ma.us) <kimberly.groff@state.ma.us>; Carey, Richard (DEP) <richard.carey@state.ma.us>; Bienkowski, Dana <DBienkowski@donahue.umassp.edu>; Harry Stewart <hstewart@normandeau.com>; Debbie Rutecki <drutecki@normandeau.com>; Weidman, Rebecca (DEP) <rebecca.weidman@state.ma.us>; Murphy, Bob <Bob.Murphy@tetrattech.com>; Henry, Dana <DHenry@donahue.umassp.edu>; Flippin, Jennifer <Jennifer.Flippin@tetrattech.com>

Subject: MDEP DO TAC meetings

Hello all;

We are glad to have your interest in the Technical Advisory Committee (TAC) for the MDEP review of marine Dissolved Oxygen (D.O.) criteria. You have been in touch with MDEP staff and have either confirmed your intent to participate or to designate someone in your stead. Please pass this on as needed.

Most importantly, we are asking for your presence for the first of three TAC meetings. Please put this on your calendar:

8:00 -12:00 noon on March 9th in Lakeville, MA.

In preparation for that meeting, we would like to hold a brief introductory webinar on **March 6th from 2:00 to 3:00**. During that webinar, we will discuss a project summary, a listing of TAC members and project staff, agenda and logistics for the March 9 meeting, and a chance for questions and answers. I don't think this will be a long meeting and we hope you can be present just to address the basics.
I will send out calendar invitations also.
Thanks very much for your interest!
Ben

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